State of Wisconsin
Department of Natural Resources
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Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Instructions: Bold fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
Sheboygan River	50700	603002	10752

Date (MMDDYYYY)	Station Name
08022011	US 8th Street bridge.

Latitude - Longitude Determination Method Used	Datum Used
Terrain Navigator	WGS84

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.74443	87.71336	43.74722	87.71604	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
13:45		26.53	637.4	

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH
14.28	182.5	8.53

Flow (m^3/sec): ~~Vel (ft/s)~~ 0.02 *

Water Level (check one - measure distance if Above or Below Normal):
☒ Normal ☐ Below: _____ (m) ☐ Above: _____ (m)

Water Clarity:
☐ Clear ☒ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
75	400

Channel Condition: (check one)
☐ Natural ☒ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km^2)
100	1.03	0.86	5	

Comments / Notes

Retrieved Hydrolab @ 13:40.

* No flow - Nonwadeable

Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Bank Stability % of bank protected by rock or vegetation	No significant bank erosion; ≥ 90% of bank protected; < 10% bare soil	Limited erosion; 70 to 90% of bank protected; 10 - 30% bare soil	Moderate erosion; 50 to 69% of bank protected; 31 - 50% bare soil	Extensive erosion; < 50% of bank protected; > 50% bare soil	12
	(12)	8	4	0	
Maximum Thalweg Depth Average of the four deepest depths recorded	Stream very deep; ≥ 1.5 m	Stream relatively deep; 1 - 1.5 m	Stream moderately deep; 0.6 - 0.9 m	Stream relatively shallow; < 0.6 m	25
	(25)	16	8	0	
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14	Habitat diversity low; occasional riffles or bends, ratio 15 to 25	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25	0
	12	8	4	(0)	
Rocky Substrate % of substrate, by area, that is bedrock, boulder, rubble/ cobble, or gravel	Extensive rocky substrate; ≥ 65% of the stream bed	Moderate rocky substrate; 45 - 65% of stream bed	Limited rocky substrate; 15 - 44% of stream bed	Rocky substrate uncommon; < 15% of stream bed	0
	25	16	8	(0)	
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; ≥ 12% of stream	Cover common, but not extensive; 7 - 12% of stream	Occasional cover, limited to one or two areas; 2 - 6% of stream	Cover rare or absent; limited to < 2% of stream	8
	25	16	(8)	0	
				Total Score	45

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Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

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Instructions: **Bold** fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name		Waterbody ID Code	SWIMS Station ID	FH Database ID
Sheboygan	River	50700	10031829	37699092

Date (MMDDYYYY)	Station Name
08022011	200m upstream of New Jersey Ave.

Latitude - Longitude Determination Method Used	Datum Used
Terrain Navigator	WGS 84

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.74466	87.73067	43.74310	87.73511	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
14:45		26.93	698.8	

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH
11.88	152.9	8.42

Flow (m³/sec) —

Water Level (check one - measure distance if Above or Below Normal):
☒ Normal ☐ Below: _____(m) ☐ Above: _____(m)

Water Clarity:
☐ Clear ☒ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
40.0	400

Channel Condition: (check one)
☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km²)
0	1.13	0.86	5	

Comments / Notes

- No flow; Non wadable.

Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Bank Stability % of bank protected by rock or vegetation	No significant bank erosion; ≥ 90% of bank protected; < 10% bare soil	Limited erosion; 70 to 90% of bank protected; 10 - 30% bare soil	Moderate erosion; 50 to 69% of bank protected; 31 - 50% bare soil	Extensive erosion; < 50% of bank protected; > 50% bare soil	8
	12	(8)	4	0	
Maximum Thalweg Depth Average of the four deepest depths recorded	Stream very deep; ≥ 1.5 m	Stream relatively deep; 1 - 1.5 m	Stream moderately deep; 0.6 - 0.9 m	Stream relatively shallow; < 0.6 m	16
	25	(16)	8	0	
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14	Habitat diversity low; occasional riffles or bends, ratio 15 to 25	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25	0
	12	8	4	(0)	
Rocky Substrate % of substrate, by area, that is bedrock, boulder, rubble/ cobble, or gravel	Extensive rocky substrate; ≥ 65% of the stream bed	Moderate rocky substrate; 45 - 65% of stream bed	Limited rocky substrate; 15 - 44% of stream bed	Rocky substrate uncommon; < 15% of stream bed	16
	25	(16)	8	0	
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; ≥ 12% of stream	Cover common, but not extensive; 7 - 12% of stream	Occasional cover, limited to one or two areas; 2 - 6% of stream	Cover rare or absent; limited to < 2% of stream	8
	25	16	(8)	0	
				Total Score	48

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Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Instructions: **Bold** fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name	**Waterbody ID Code**	**SWIMS Station ID**	FH Database ID
Sheboygan River	50700	603095	10842

Date (MMDDYYYY)	**Station Name**
09012011	US CTHY PK @ Esslingen Park

Latitude - Longitude Determination Method Used	Datum Used
Terrain Navigator	WGS84

Start Latitude	**Start Longitude**	End Latitude	End Longitude	County
43.74039	87.74810	43.74132	87.75227	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
10:45	21.66	22.27	755.3	96.0

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH
8.72	102.7	7.97 TDS: 483.0

Flow (m³/sec)	**Water Level** (check one - measure distance if Above or Below Normal):	**Water Clarity:**
2.01	☐ Normal ☒ Below: 0.1 (m) ☐ Above: _____ (m)	☒ Clear ☐ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	**Station Length (m)**
15 m	400 m

Channel Condition: (check one) ☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km²)
0	1.55	0.86	5	

Comments / Notes

WSX; Clear; Warm ≈ 75°F; Calm

Flow; USGS Gauge Station

Hobs = 2.01 cms

Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Bank Stability % of bank protected by rock or vegetation	No significant bank erosion; ≥ 90% of bank protected; < 10% bare soil 12	Limited erosion; 70 to 90% of bank protected; 10 - 30% bare soil (8)	Moderate erosion; 50 to 69% of bank protected; 31 - 50% bare soil 4	Extensive erosion; < 50% of bank protected; > 50% bare soil 0	8
Maximum Thalweg Depth Average of the four deepest depths recorded	Stream very deep; ≥ 1.5 m 25	Stream relatively deep; 1 - 1.5 m (16)	Stream moderately deep; 0.6 - 0.9 m 8	Stream relatively shallow; < 0.6 m 0	16
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10 (12)	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14 8	Habitat diversity low; occasional riffles or bends, ratio 15 to 25 4	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25 0	12
Rocky Substrate % of substrate, by area, that is bedrock, boulder, rubble/ cobble, or gravel	Extensive rocky substrate; ≥ 65% of the stream bed (25)	Moderate rocky substrate; 45 - 65% of stream bed 16	Limited rocky substrate; 15 - 44% of stream bed 8	Rocky substrate uncommon; < 15% of stream bed 0	25
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; ≥ 12% of stream 25	Cover common, but not extensive; 7 - 12% of stream (16)	Occasional cover, limited to one or two areas; 2 - 6% of stream 8	Cover rare or absent; limited to < 2% of stream 0	16
				Total Score	77

15 | 100

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Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

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Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
Sheboygan River	50700	10011269	129105

Date (MMDDYYYY)	Station Name
09012011	Upstream Kohler Municipal Garage

Latitude - Longitude Determination Method Used	Datum Used
Terrain Navigator	WGS 84

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.73162	87.77014	43.72886	87.76815	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
11:10	22.0	22.42	737.8	80.0

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH	
10.19	120.5	8.14	TDS: 472.4

Flow (m³/sec)	Water Level (check one - measure distance if Above or Below Normal):	Water Clarity:
1.57	☐ Normal ☒ Below: 0.10 (m) ☐ Above: _____ (m)	☐ Clear ☒ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
20.0	400

Channel Condition: (check one) ☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km²)
0	2.71	1.49	5	

Comments / Notes

wx: Clear; Calm; Warm ≈ 80°F

Stream width: ~~75.0~~ 66 ft.

Distance (ft)	Depth (ft)	Vel (ft/s)
RB	0	0
5	0.35	0.55
10	0.75	0.79
15	1.00	0.89
20	1.10	0.81
25	1.25	0.96
30	1.10	0.84
35	1.0	0.94
40	1.60	1.07
45	2.00	0.92
50	2.00	0.62
55	1.60	0.28
60	1.10	0.24
65	0.45	0.28
70	0.40	0.01
LB	0	0

Flow: 55.5 cfs = 1.57 cms

Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Bank Stability % of bank protected by rock or vegetation	No significant bank erosion; ≥ 90% of bank protected; < 10% bare soil 12	Limited erosion; 70 to 90% of bank protected; 10 - 30% bare soil (8)	Moderate erosion; 50 to 69% of bank protected; 31 - 50% bare soil 4	Extensive erosion; < 50% of bank protected; > 50% bare soil 0	8
Maximum Thalweg Depth Average of the four deepest depths recorded	Stream very deep; ≥ 1.5 m 25	Stream relatively deep; 1 - 1.5 m (16)	Stream moderately deep; 0.6 - 0.9 m 8	Stream relatively shallow; < 0.6 m 0	16
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10 (12)	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14 8	Habitat diversity low; occasional riffles or bends, ratio 15 to 25 4	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25 0	12
Rocky Substrate % of substrate, by area, that is bedrock, boulder, rubble/ cobble, or gravel	Extensive rocky substrate; ≥ 65% of the stream bed (25)	Moderate rocky substrate; 45 - 65% of stream bed 16	Limited rocky substrate; 15 - 44% of stream bed 8	Rocky substrate uncommon; < 15% of stream bed 0	25
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; ≥ 12% of stream (25)	Cover common, but not extensive; 7 - 12% of stream 16	Occasional cover, limited to one or two areas; 2 - 6% of stream 8	Cover rare or absent; limited to < 2% of stream 0	25
				Total Score	86

20 | 160

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Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
Sheboygan River	50700	10031887	37740259

Date (MMDDYYYY)	Station Name
09012011	US Confluence w/ Weedens Creek

Latitude - Longitude Determination Method Used	Datum Used
Terrain Navigator	WGS84

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.72088	87.77574	43.72409	87.77538	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
12:20	24.0	23.55	719.5	62.0

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH
10.77	130.5	8.28 TDS: 460.8

Flow (m³/sec)	Water Level (check one - measure distance if Above or Below Normal):	Water Clarity:
1.73	☐ Normal ☒ Below: 0.1 (m) ☐ Above: _____ (m)	☐ Clear ☒ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
35.0	400

Channel Condition: (check one) ☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km²)
0	1.17	0.97	5	

Comments / Notes

Stream width: 145 ft.

Distance (ft.)	Depth (ft)	Vel (ft/s)
LB	0	0
10	1.40	0.08
20	1.70	0.55
30	1.55	0.83
40	1.30	0.75
50	0.40	0.91
60	0.30	0.85
70	0.15	1.30
80	0.50	0.53
90	0.90	0.00
100	0.70	0.40
110	1.40	0.63
120	1.50	0.05
130	1.20	0.30
140	0.85	0.03
RB	0	0

Flow: 61.04 cfs = 1.73 cms

Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Bank Stability % of bank protected by rock or vegetation	No significant bank erosion; ≥ 90% of bank protected; < 10% bare soil	Limited erosion; 70 to 90% of bank protected; 10 - 30% bare soil	Moderate erosion; 50 to 69% of bank protected; 31 - 50% bare soil	Extensive erosion; < 50% of bank protected; > 50% bare soil	8
	12	(8)	4	0	
Maximum Thalweg Depth Average of the four deepest depths recorded	Stream very deep; ≥ 1.5 m	Stream relatively deep; 1 - 1.5 m	Stream moderately deep; 0.6 - 0.9 m	Stream relatively shallow; < 0.6 m	8
	25	16	(8)	0	
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14	Habitat diversity low; occasional riffles or bends, ratio 15 to 25	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25	12
	(12)	8	4	0	
Rocky Substrate % of substrate, by area, that is bedrock, boulder, rubble/ cobble, or gravel	Extensive rocky substrate; ≥ 65% of the stream bed	Moderate rocky substrate; 45 - 65% of stream bed	Limited rocky substrate; 15 - 44% of stream bed	Rocky substrate uncommon; < 15% of stream bed	25
	(25)	16	8	0	
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; ≥ 12% of stream	Cover common, but not extensive; 7 - 12% of stream	Occasional cover, limited to one or two areas; 2 - 6% of stream	Cover rare or absent; limited to < 2% of stream	25
	(25)	16	8	0	
				Total Score	78

35

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Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Instructions: **Bold** fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
Sheboygan River	50700	10031888	37746273

Date (MMDDYYYY)	Station Name
09012011	Between Dams (335 Meters above Waldenhaus Dam)

Latitude - Longitude Determination Method Used	Datum Used
Terrain Navigator	WGS84

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.73447	87.77797	43.73347	87.78312	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
13:40	24.0	23.65	708.8	55.0

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH
9.54	114.8	8.21 TDS: 453.6

Flow (m^3/sec): None

Water Level (check one - measure distance if Above or Below Normal): ☐ Normal ☒ Below: 0.1 (m) ☐ Above: _____ (m)

Water Clarity: ☐ Clear ☒ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
30.0	400

Channel Condition: (check one) ☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km^2)
0	1.81	0.97	5	

Comments / Notes
wx: Clear; Hot ~ 85°F; Calm
- No flow - Nonwadable

Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Bank Stability % of bank protected by rock or vegetation	No significant bank erosion; ≥ 90% of bank protected; < 10% bare soil	Limited erosion; 70 to 90% of bank protected; 10 - 30% bare soil	Moderate erosion; 50 to 69% of bank protected; 31 - 50% bare soil	Extensive erosion; < 50% of bank protected; > 50% bare soil	4
	12	8	(4)	0	
Maximum Thalweg Depth Average of the four deepest depths recorded	Stream very deep; ≥ 1.5 m	Stream relatively deep; 1 - 1.5 m	Stream moderately deep; 0.6 - 0.9 m	Stream relatively shallow; < 0.6 m	25
	(25)	16	8	0	
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14	Habitat diversity low; occasional riffles or bends, ratio 15 to 25	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25	4
	12	8	(4)	0	
Rocky Substrate % of substrate, by area, that is bedrock, boulder, rubble/ cobble, or gravel	Extensive rocky substrate; ≥ 65% of the stream bed	Moderate rocky substrate; 45 - 65% of stream bed	Limited rocky substrate; 15 - 44% of stream bed	Rocky substrate uncommon; < 15% of stream bed	8
	25	16	(8)	0	
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; ≥ 12% of stream	Cover common, but not extensive; 7 - 12% of stream	Occasional cover, limited to one or two areas; 2 - 6% of stream	Cover rare or absent; limited to < 2% of stream	16
	25	(16)	8	0	
				Total Score	57

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Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07) Page 1 of 2

Instructions: Bold fields must be completed. Record all measurements in metric units. 603400

Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
Sheboygan River	53700	603378	11061

Date (MMDDYYYY)	Station Name
09012011	@ Kohler Stables Property - Downstream end

Latitude - Longitude Determination Method Used	Datum Used
Terrain Navigator	WGS84

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.72825	87.79589	43.72549	87.79416	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
13:55	24.0	23.69	729.8	59.0

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH
9.53	115.4	8.29 TDS: 466.8

Flow (m³/sec)	Water Level (check one - measure distance if Above or Below Normal):	Water Clarity:
1.69	☐ Normal ☒ Below: 0.1 (m) ☐ Above: _____ (m)	☐ Clear ☒ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
~~20.0~~ 25.0	400

Channel Condition: (check one) ☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km²)
0	1.82	0.97	5	

Comments / Notes

Stream width: 98 ft.

(Distance (ft)	Depth (ft)	Vel (ft/s)
LB	0	0
7	0.35	1.12
14	0.60	1.43
21	0.60	1.65
28	0.75	1.68
35	0.60	1.56
42	0.60	1.21
49	0.90	1.26
56	0.75	1.03
63	0.90	0.83
70	0.90	0.56
77	0.60	0.47
84	0.50	0.16
91	0.55	0.03
RB	0	0

Flow: 59.87 cfs = 1.69 cms

- Change to 603400 ? - Entered data here.

Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Bank Stability % of bank protected by rock or vegetation	No significant bank erosion; ≥ 90% of bank protected; < 10% bare soil	Limited erosion; 70 to 90% of bank protected; 10 - 30% bare soil	Moderate erosion; 50 to 69% of bank protected; 31 - 50% bare soil	Extensive erosion; < 50% of bank protected; > 50% bare soil	4
	12	8	(4)	0	
Maximum Thalweg Depth Average of the four deepest depths recorded	Stream very deep; ≥ 1.5 m	Stream relatively deep; 1 - 1.5 m	Stream moderately deep; 0.6 - 0.9 m	Stream relatively shallow; < 0.6 m	8
	25	~~16~~	(8)	0	
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14	Habitat diversity low; occasional riffles or bends, ratio 15 to 25	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25	8
	12	(8)	4	0	
Rocky Substrate % of substrate, by area, that is bedrock, boulder, rubble/ cobble, or gravel	Extensive rocky substrate; ≥ 65% of the stream bed	Moderate rocky substrate; 45 - 65% of stream bed	Limited rocky substrate; 15 - 44% of stream bed	Rocky substrate uncommon; < 15% of stream bed	16
	25	(16)	8	0	
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; ≥ 12% of stream	Cover common, but not extensive; 7 - 12% of stream	Occasional cover, limited to one or two areas; 2 - 6% of stream	Cover rare or absent; limited to < 2% of stream	25
	(25)	16	8	0	
				Total Score	61

20'

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Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Instructions: Bold fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
Sheboygan River	50700	603434	11094

Date (MMDDYYYY)	Station Name
09012011	US Onion River Confluence (25 meters)

Latitude - Longitude Determination Method Used	Datum Used
Terrain Navigator	WGS 84

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.72358	87.80452	43.72439	87.80802	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
14:30	24.0	24.88	744.6	71.0

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH	
8.77	108.5	8.36	TDS: 476.5

Flow (m³/sec)	Water Level (check one - measure distance if Above or Below Normal):	Water Clarity:
1.25	☐ Normal ☒ Below: 0.1 (m) ☐ Above: _____ (m)	☐ Clear ☒ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
16.0	400.0

Channel Condition: (check one) ☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km²)
0	1.20	0.97	5	

Comments / Notes

Stream Width: 52.0 ft

Distance (ft)	Depth (ft)	Vel. (ft/s)
LB	0	0
5	1.10	0.77
10	1.00	0.93
15	1.05	0.66
~~20~~	0.70	1.10
25	0.90	0.95
30	0.90	1.20
35	1.15	1.22
40	1.30	0.76
45	1.50	1.06
50	0.40	0.18
RB	0	0

Flow: 44.0 cfs = 1.25 cms

Warm Mainstem

Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Bank Stability % of bank protected by rock or vegetation	No significant bank erosion; ≥ 90% of bank protected; < 10% bare soil	Limited erosion; 70 to 90% of bank protected; 10 - 30% bare soil	Moderate erosion; 50 to 69% of bank protected; 31 - 50% bare soil	Extensive erosion; < 50% of bank protected; > 50% bare soil	4
	12	8	(4)	0	
Maximum Thalweg Depth Average of the four deepest depths recorded	Stream very deep; ≥ 1.5 m	Stream relatively deep; 1 - 1.5 m	Stream moderately deep; 0.6 - 0.9 m	Stream relatively shallow; < 0.6 m	16
	25	(16)	8	0	
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14	Habitat diversity low; occasional riffles or bends, ratio 15 to 25	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25	12
	(12)	8	4	0	
Rocky Substrate % of substrate, by area, that is bedrock, boulder, rubble/ cobble, or gravel	Extensive rocky substrate; ≥ 65% of the stream bed	Moderate rocky substrate; 45 - 65% of stream bed	Limited rocky substrate; 15 - 44% of stream bed	Rocky substrate uncommon; < 15% of stream bed	25
	(25)	16	8	0	
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; ≥ 12% of stream	Cover common, but not extensive; 7 - 12% of stream	Occasional cover, limited to one or two areas; 2 - 6% of stream	Cover rare or absent; limited to < 2% of stream	25
	(25)	16	8	0	
				Total Score	82

16.6 | 80

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Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Instructions: **Bold** fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name	**Waterbody ID Code**	**SWIMS Station ID**	**FH Database ID**
Onion River	51200	603480	11138

Date (MMDDYYYY)	**Station Name**
08042011	15m upstream of Ourtown Road

Latitude - Longitude Determination Method Used	**Datum Used**
Terrain Navigator	WGS84

Start Latitude	**Start Longitude**	**End Latitude**	**End Longitude**	**County**
43.69680	87.82080	43.69579	87.81900	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
15:30	—	27.86	632.7	29.0

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH
16.48	215.7	8.96 TDS: 404.8

Flow (m^3/sec)	**Water Level** (check one - measure distance if Above or Below Normal):	**Water Clarity:**
0.51	☒ Normal ☐ Below: _____(m) ☐ Above: _____(m)	☐ Clear ☒ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	**Station Length (m)**
12.0	400

Channel Condition: (check one) ☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km^2)
0	1.83	4.61	4	

Comments / Notes

Flow: 18.18 cfs (0.51 cms)

Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Bank Stability % of bank protected by rock or vegetation	No significant bank erosion; ≥ 90% of bank protected; < 10% bare soil	Limited erosion; 70 to 90% of bank protected; 10 - 30% bare soil	Moderate erosion; 50 to 69% of bank protected; 31 - 50% bare soil	Extensive erosion; < 50% of bank protected; > 50% bare soil	12
	(12)	8	4	0	
Maximum Thalweg Depth Average of the four deepest depths recorded	Stream very deep; ≥ 1.5 m	Stream relatively deep; 1 - 1.5 m	Stream moderately deep; 0.6 - 0.9 m	Stream relatively shallow; < 0.6 m	8
	25	16	(8)	~~0~~	
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14	Habitat diversity low; occasional riffles or bends, ratio 15 to 25	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25	12
	(12)	8	4	0	
Rocky Substrate % of substrate, by area, that is bedrock, boulder, rubble/ cobble, or gravel	Extensive rocky substrate; ≥ 65% of the stream bed	Moderate rocky substrate; 45 - 65% of stream bed	Limited rocky substrate; 15 - 44% of stream bed	Rocky substrate uncommon; < 15% of stream bed	25
	(25)	16	8	0	
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; ≥ 12% of stream	Cover common, but not extensive; 7 - 12% of stream	Occasional cover, limited to one or two areas; 2 - 6% of stream	Cover rare or absent; limited to < 2% of stream	25
	(25)	16	8	0	
				Total Score	~~77~~ 82

12 | 120

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Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Instructions: Bold fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
Onion River	51200	10031889	37742151

Date (MMDDYYYY)	Station Name
08042011	16m upstream of CTH Y A

Latitude - Longitude Determination Method Used	Datum Used
Terrain Navigator	WGS84

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.62299	87.83690	43.61975	87.83804	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
14:45	—	26.35	702.3	29.0

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH	
11.75	149.6	8.28	TDS 449.6

Flow (m^3/sec)	Water Level (check one - measure distance if Above or Below Normal):	Water Clarity:
0.38	☒ Normal ☐ Below: _____(m) ☐ Above: _____(m)	☐ Clear ☒ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
~~13.0~~ 13.0	400

Channel Condition: (check one) ☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km^2)
0	1.68	0.71	4	

Comments / Notes

Stream width (bt): 45.00ft

Distance (bt)	Depth (bt)	Vel. (bt/s)
LB	0	0
4	1.2	0
8	1.95	0.12
12	2.15	0.26
16	2.00	0.24
20	1.90	0.17
24	1.95	0.20
28	1.90	0.19
32	2.20	0.25
36	2.20	0.16
40	1.40	0.09
44	0.95	0.00
RB	0	0

Flow: 13.26 cfs (0.38 cms)

Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m wide

Form 3600-532B (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Bank Stability % of bank protected by rock or vegetation	No significant bank erosion; ≥ 90% of bank protected; < 10% bare soil	Limited erosion; 70 to 90% of bank protected; 10 - 30% bare soil	Moderate erosion; 50 to 69% of bank protected; 31 - 50% bare soil	Extensive erosion; < 50% of bank protected; > 50% bare soil	4
	12	8	(4)	0	
Maximum Thalweg Depth Average of the four deepest depths recorded	Stream very deep; ≥ 1.5 m	Stream relatively deep; 1 - 1.5 m	Stream moderately deep; 0.6 - 0.9 m	Stream relatively shallow; < 0.6 m	8
	25	16	(8)	0	
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14	Habitat diversity low; occasional riffles or bends, ratio 15 to 25	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25	0
	12	8	4	(0)	
Rocky Substrate % of substrate, by area, that is bedrock, boulder, rubble/ cobble, or gravel	Extensive rocky substrate; ≥ 65% of the stream bed	Moderate rocky substrate; 45 - 65% of stream bed	Limited rocky substrate; 15 - 44% of stream bed	Rocky substrate uncommon; < 15% of stream bed	8
	25	16	(8)	0	
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; ≥ 12% of stream	Cover common, but not extensive; 7 - 12% of stream	Occasional cover, limited to one or two areas; 2 - 6% of stream	Cover rare or absent; limited to < 2% of stream	8
	25	16	(8)	0	
				Total Score	28

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Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3600-532A (R 6/07)

Instructions: **Bold** fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
Onion River	51200	10031890	37740198

Date (MMDDYYYY)	Station Name
08042011	15m upstream of Rissouw Road

Latitude - Longitude Determination Method Used	Datum Used
Terrain Navigator	WGS 84

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.66146	87.87311	43.66094	87.87117	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
13:50	—	25.25	660.0	24.0

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH	TDS
8.55	106.5	8.07	422.5

Flow (m³/sec)	Water Level (check one - measure distance if Above or Below Normal):	Water Clarity:
0.36	☒ Normal ☐ Below: _____(m) ☐ Above: _____(m)	☐ Clear ☒ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
7.5 ~~12.0~~ 7.5	400

Channel Condition: (check one) ☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km²)
0	1.49	1.16	3	

Comments / Notes

Stream width: 24.5 ft

Distance (ft)	Depth (ft)	Vel. (ft/s)
(LB) 0	0	0
2	0.75	0.01
4	0.85	0.48
6	0.80	0.70
8	1.00	0.70
10	1.00	0.83
12	1.10	0.89
14	1.10	0.79
16	1.05	0.71
18	0.95	0.47
20	0.95	0.38
22	0.95	0.44
24	0.50	0.14
RB	0	0

Flow: 12.62 cfs (0.36 cms)

Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3600-532A (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Riparian Buffer Width (m) Width of contiguous undisturbed land uses; meadow, shrubs, woodland, wetland, exposed rock	Riparian zone well protected; buffer wide (> 10.0 m) 15	Riparian zone protected, but buffer width moderate (5.0 - 10.0 m) (10)	Riparian zone moderately disturbed, buffer narrow (1.0 - 4.9 m) 5	Most of the riparian zone disturbed, buffer very narrow or absent (< 1.0 m) 0	10
Bank Erosion Width of bare soil on bank, along transects	No significant bank erosion; < 0.20 m of bank is bare soil 15	Limited erosion; 0.20 - 0.50 m of bank is bare soil 10	Moderate erosion; 0.51 - 1.0 m of bank is bare soil (5)	Extensive erosion; > 1.0 m of bank is bare soil 0	5
Pool Area % of stream length in pools	Pools common; wide, deep, slow velocity habitat, balanced by other habitats; 40 to 60% of station 10	Pools present; not frequent or over-abundant; 30 to 39% or 61 to 70% of station 7	Pools present, but either rare or overly dominant, few other habitats present; 10 to 29% or 71 to 90% of station (3)	Pools either absent or dominant, not balanced by other habitats; < 10% or > 90% of station 0	3
Width:Depth Ratio Average stream width divided by average thalweg depth in runs and pools	Streams very deep and narrow; width/depth ≤ 7 15	Stream relatively deep and narrow; width/depth 8-15 10	Stream moderately deep and narrow; width/depth 16-25 (5)	Stream relatively wide and shallow; width/depth > 25 0	5
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10 15	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14 10	Habitat diversity low; occasional riffles or bends, ratio 15 to 25 (5)	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25 0	5
Fine Sediments % of the substrate that is < 2 mm (sand, silt, or clay)	Fines rare or absent, < 10% of the stream bed 15	Fines present but limited, generally in stream margins or pools; 10 to 20% of stream bed 10	Fines common in mid-channel areas, present in riffles and extensive in pools; 21 to 60% 5	Fines extensive in all habitats; > 60% of stream bed covered (0)	0
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; > 15% of stream 15	Cover common, but not extensive; 10 - 15% of stream (10)	Occasional cover, limited to one or two areas; 5 - 9% of stream 5	Cover rare or absent; limited to < 5% of stream 0	10
				Total Score	38

18 / 7.5 = 0.4 ; 12 / 10 = 1.2 ; 4.35 / 280

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Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3600-532A (R 6/07)

Instructions: Bold fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
Weedens CK.	50800	10015600	137320

Date (MMDDYYYY)	Station Name
09272011	Upstream State Highway 28 (40 meters)

Latitude - Longitude Determination Method Used	Datum Used
GPS (Garmin Unit)	NAD 83

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.71708	-87.77284	43.7167	-87.7735	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
1030	14.65	14.46	681.5	21.0

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH	
8.79	~~8.79~~ 89.1	7.68	TDS: 436.7

Flow (m³/sec)	Water Level (check one - measure distance if Above or Below Normal):	Water Clarity:
0.050	☐ Normal ☐ Below: _____ (m) ☒ Above: 0.1 (m)	☐ Clear ☒ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
3.5	122.0

Channel Condition: (check one) ☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km²)
0	1.86	7.23	3	

Comments / Notes

Significant Rain in Last 48 HRS; Salmon/Steelhead? present in Stream

WX: 100% CC, cool

FLOW = 1.76 cfs ; 0.050 cms

stream width: 10.0 ft

	Depth (ft)	Vel (ft/s)
LB	0	0
1	0.2	0.10
2	0.5	0.38
3	0.35	0.53
4	0.45	0.65
5	0.45	0.67
6	0.60	0.54
7	0.70	0.45
8	0.70	0.28
9	0.50	0.21
RB 10	0.40	0.05

Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3600-532A (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Riparian Buffer Width (m) Width of contiguous undisturbed land uses; meadow, shrubs, woodland, wetland, exposed rock	Riparian zone well protected; buffer wide (> 10.0 m) 15	Riparian zone protected, but buffer width moderate (5.0 - 10.0 m) 10	Riparian zone moderately disturbed, buffer narrow (1.0 - 4.9 m) 5	Most of the riparian zone disturbed, buffer very narrow or absent (< 1.0 m) 0	15
Bank Erosion Width of bare soil on bank, along transects	No significant bank erosion; < 0.20 m of bank is bare soil 15	Limited erosion; 0.20 - 0.50 m of bank is bare soil 10	Moderate erosion; 0.51 - 1.0 m of bank is bare soil 5	Extensive erosion; > 1.0 m of bank is bare soil 0	0
Pool Area % of stream length in pools	Pools common; wide, deep, slow velocity habitat, balanced by other habitats; 40 to 60% of station 10	Pools present; not frequent or over-abundant; 30 to 39% or 61 to 70% of station 7	Pools present, but either rare or overly dominant, few other habitats present; 10 to 29% or 71 to 90% of station 3	Pools either absent or dominant, not balanced by other habitats; < 10% or > 90% of station 0	7
Width:Depth Ratio Average stream width divided by average thalweg depth in runs and pools	Streams very deep and narrow; width/depth ≤ 7 15	Stream relatively deep and narrow; width/depth 8-15 10	Stream moderately deep and narrow; width/depth 16-25 5	Stream relatively wide and shallow; width/depth > 25 0	10
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10 15	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14 10	Habitat diversity low; occasional riffles or bends, ratio 15 to 25 5	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25 0	15
Fine Sediments % of the substrate that is < 2 mm (sand, silt, or clay)	Fines rare or absent, < 10% of the stream bed 15	Fines present but limited, generally in stream margins or pools; 10 to 20% of stream bed 10	Fines common in mid-channel areas, present in riffles and extensive in pools; 21 to 60% 5	Fines extensive in all habitats; > 60% of stream bed covered 0	10
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; > 15% of stream 15	Cover common, but not extensive; 10 - 15% of stream 10	Occasional cover, limited to one or two areas; 5 - 9% of stream 5	Cover rare or absent; limited to < 5% of stream 0	10
				Total Score	67

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Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3600-532A (R 6/07)

Instructions: **Bold** fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
Weedens CK.	50800	10031564	3693043

Date (MMDDYYYY)	Station Name
09/27/2011	Upstream CTHWY A (10 meters)

Latitude - Longitude Determination Method Used	Datum Used
GPS (Garmin)	WGS 84

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.6944	-87.7773	43.6935	-87.7779	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
1145	15.35	14.55	826.0	36.0

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH
7.33	74.2	7.53 TDS: 527.5

Flow (m³/sec)	Water Level (check one - measure distance if Above or Below Normal):	Water Clarity:
0.036	☒ Normal ☐ Below: _____(m) ☐ Above: _____(m)	☐ Clear ☒ Turbid ☒ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
2.0	100

Channel Condition: (check one) ☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km²)
0	1.16	2.33	3	

Comments / Notes

WX: 100% CC, No Precip, cool ≈ 60°F

Significant Precip in last 48 hrs

Stream width: 6.5 ft

Flow = 1.28 CFS ; 0.036 CMS

	Depth (ft)	Vel (ft/s)
LB	0	0
1	0.20	0.57
2	0.20	0.77
3	0.30	0.85
4	0.35	1.03
5	0.3	1.02
6	0.3	0.40
RB 6.5	0	0

Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3600-532A (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Riparian Buffer Width (m) Width of contiguous undisturbed land uses; meadow, shrubs, woodland, wetland, exposed rock	Riparian zone well protected; buffer wide (> 10.0 m) 15	Riparian zone protected, but buffer width moderate (5.0 - 10.0 m) 10	Riparian zone moderately disturbed, buffer narrow (1.0 - 4.9 m) 5	Most of the riparian zone disturbed, buffer very narrow or absent (< 1.0 m) 0	5
Bank Erosion Width of bare soil on bank, along transects	No significant bank erosion; < 0.20 m of bank is bare soil 15	Limited erosion; 0.20 - 0.50 m of bank is bare soil 10	Moderate erosion; 0.51 - 1.0 m of bank is bare soil 5	Extensive erosion; > 1.0 m of bank is bare soil 0	5
Pool Area % of stream length in pools	Pools common; wide, deep, slow velocity habitat, balanced by other habitats; 40 to 60% of station 10	Pools present; not frequent or over-abundant; 30 to 39% or 61 to 70% of station 7	Pools present, but either rare or overly dominant, few other habitats present; 10 to 29% or 71 to 90% of station 3	Pools either absent or dominant, not balanced by other habitats; < 10% or > 90% of station 0	0
Width:Depth Ratio Average stream width divided by average thalweg depth in runs and pools	Streams very deep and narrow; width/depth ≤ 7 15	Stream relatively deep and narrow; width/depth 8-15 10	Stream moderately deep and narrow; width/depth 16-25 5	Stream relatively wide and shallow; width/depth > 25 0	10
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10 15	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14 10	Habitat diversity low; occasional riffles or bends, ratio 15 to 25 5	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25 0	5
Fine Sediments % of the substrate that is < 2 mm (sand, silt, or clay)	Fines rare or absent, < 10% of the stream bed 15	Fines present but limited, generally in stream margins or pools; 10 to 20% of stream bed 10	Fines common in mid-channel areas, present in riffles and extensive in pools; 21 to 60% 5	Fines extensive in all habitats; > 60% of stream bed covered 0	10
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; > 15% of stream 15	Cover common, but not extensive; 10 - 15% of stream 10	Occasional cover, limited to one or two areas; 5 - 9% of stream 5	Cover rare or absent; limited to < 5% of stream 0	10
				Total Score	45

12.5 / 0.2 ⟌ 2.5

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Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3600-532A (R 6/07)

Instructions: Bold fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
Willow Creek	50740	10031891	37742220

Date (MMDDYYYY)	Station Name
08052011	Willow Creek US confluence w/ Sheb River (30 meters)

Latitude - Longitude Determination Method Used	Datum Used
Terrain Navigator	WGS84

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.74127	87.74696	43.74307	87.74694	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
0955	24.0	19.07	1118	81 cm

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH
8.73	96.7	7.89

Flow (m³/sec)	Water Level (check one - measure distance if Above or Below Normal):	Water Clarity:
0.023	☒ Normal ☐ Below: _____(m) ☐ Above: _____(m)	☒ Clear ☐ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
6.0	210

Channel Condition: (check one) ☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km²)
100	1.65	3.59	2	

Comments / Notes

WX: 20% CC ≈ 75°F Breeze

Stream width 9 ft

LB	0	0
1	0.4	0.18
2	0.45	0.15
3	0.05	0.22
4	0.75	0.27
5	0.75	0.31
6	0.65	0.14
7	0.45	0
8	0.2	0
9	0	0

0.81 cfs = 0.023 CMS

Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3600-532A (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Riparian Buffer Width (m) Width of contiguous undisturbed land uses; meadow, shrubs, woodland, wetland, exposed rock	Riparian zone well protected; buffer wide (> 10.0 m) 15	Riparian zone protected, but buffer width moderate (5.0 - 10.0 m) 10	Riparian zone moderately disturbed, buffer narrow (1.0 - 4.9 m) 5	Most of the riparian zone disturbed, buffer very narrow or absent (< 1.0 m) 0	15
Bank Erosion Width of bare soil on bank, along transects	No significant bank erosion; < 0.20 m of bank is bare soil 15	Limited erosion; 0.20 - 0.50 m of bank is bare soil 10	Moderate erosion; 0.51 - 1.0 m of bank is bare soil 5	Extensive erosion; > 1.0 m of bank is bare soil 0	5
Pool Area % of stream length in pools	Pools common; wide, deep, slow velocity habitat, balanced by other habitats; 40 to 60% of station 10	Pools present; not frequent or over-abundant; 30 to 39% or 61 to 70% of station 7	Pools present, but either rare or overly dominant, few other habitats present; 10 to 29% or 71 to 90% of station 3	Pools either absent or dominant, not balanced by other habitats; < 10% or > 90% of station 0	3
Width:Depth Ratio Average stream width divided by average thalweg depth in runs and pools	Streams very deep and narrow; width/depth ≤ 7 15	Stream relatively deep and narrow; width/depth 8-15 10	Stream moderately deep and narrow; width/depth 16-25 5	Stream relatively wide and shallow; width/depth > 25 0	5
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10 15	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14 10	Habitat diversity low; occasional riffles or bends, ratio 15 to 25 5	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25 0	10
Fine Sediments % of the substrate that is < 2 mm (sand, silt, or clay)	Fines rare or absent, < 10% of the stream bed 15	Fines present but limited, generally in stream margins or pools; 10 to 20% of stream bed 10	Fines common in mid-channel areas, present in riffles and extensive in pools; 21 to 60% 5	Fines extensive in all habitats; > 60% of stream bed covered 0	10
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; > 15% of stream 15	Cover common, but not extensive; 10 - 15% of stream 10	Occasional cover, limited to one or two areas; 5 - 9% of stream 5	Cover rare or absent; limited to < 5% of stream 0	5
				Total Score	53

17 / 3.5 = 0.2

State of Wisconsin
Department of Natural Resources
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Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3600-532A (R 6/07)

Instructions: Bold fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
Willow Creek	50740	10009340	124433

Date (MMDDYYYY)	Station Name
08 05 2011	Willow Creek US Greendale Road (30 meters upstream)

Latitude - Longitude Determination Method Used	Datum Used
Terrain Navigator	WGS 84

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.74403	87.75937	43.74572	87.75979	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
1048	24.0	17.48	1059	122 cm

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH
9.28	99.4	7.03

Flow (m³/sec)	Water Level (check one - measure distance if Above or Below Normal):	Water Clarity:
0.021	☒ Normal ☐ Below: _____(m) ☐ Above: _____(m)	☒ Clear ☐ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
4.0	140

Channel Condition: (check one) ☒ Natural ☐ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km²)
0	1.30	9.08	1	

Comments / Notes

WX: 10% CC ≈ 75°F Slight Breeze

STREAM WIDTH 10Ft

LB	0	0
1	0.4	0.04
2	0.4	0.13
3	0.6	0.12
4	0.6	0.15
5	0.6	0.31
6	0.6	0.14
7	0.6	0.20
8	0.4	0.17
9	0.3	0.12
10	0	0

0.72 cfs = 0.021 m³/s

Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3600-532A (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Riparian Buffer Width (m) Width of contiguous undisturbed land uses; meadow, shrubs, woodland, wetland, exposed rock	Riparian zone well protected; buffer wide (> 10.0 m) 15	Riparian zone protected, but buffer width moderate (5.0 - 10.0 m) 10	Riparian zone moderately disturbed, buffer narrow (1.0 - 4.9 m) 5	Most of the riparian zone disturbed, buffer very narrow or absent (< 1.0 m) 0	15
Bank Erosion Width of bare soil on bank, along transects	No significant bank erosion; < 0.20 m of bank is bare soil 15	Limited erosion; 0.20 - 0.50 m of bank is bare soil 10	Moderate erosion; 0.51 - 1.0 m of bank is bare soil 5	Extensive erosion; > 1.0 m of bank is bare soil 0	5
Pool Area % of stream length in pools	Pools common; wide, deep, slow velocity habitat, balanced by other habitats; 40 to 60% of station 10	Pools present; not frequent or over-abundant; 30 to 39% or 61 to 70% of station 7	Pools present, but either rare or overly dominant, few other habitats present; 10 to 29% or 71 to 90% of station 3	Pools either absent or dominant, not balanced by other habitats; < 10% or > 90% of station 0	3
Width:Depth Ratio Average stream width divided by average thalweg depth in runs and pools	Streams very deep and narrow; width/depth ≤ 7 15	Stream relatively deep and narrow; width/depth 8-15 10	Stream moderately deep and narrow; width/depth 16-25 5	Stream relatively wide and shallow; width/depth > 25 0	5
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10 15	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14 10	Habitat diversity low; occasional riffles or bends, ratio 15 to 25 5	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25 0	10
Fine Sediments % of the substrate that is < 2 mm (sand, silt, or clay)	Fines rare or absent, < 10% of the stream bed 15	Fines present but limited, generally in stream margins or pools; 10 to 20% of stream bed 10	Fines common in mid-channel areas, present in riffles and extensive in pools; 21 to 60% 5	Fines extensive in all habitats; > 60% of stream bed covered 0	10
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; > 15% of stream 15	Cover common, but not extensive; 10 - 15% of stream 10	Occasional cover, limited to one or two areas; 5 - 9% of stream 5	Cover rare or absent; limited to < 5% of stream 0	10
				Total Score	58

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Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3600-532A (R 6/07)

Instructions: **Bold** fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
Willow Creek	50740	10021113	1891640

Date (MMDDYYYY)	Station Name
08052011	Willow CK US Woodlake RD.

Latitude - Longitude Determination Method Used	Datum Used
Terrain Navigator	WGS84

Start Latitude	Start Longitude	End Latitude	End Longitude	County
43.7502	87.7826	43.7509	87.7886	Sheboygan

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (µs/cm)	Transparency (cm)
1149	26.7	26.41	655.3	122 cm

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH
6.76	86.8	8.05

Flow (m³/sec): 0.006

Water Level (check one - measure distance if Above or Below Normal): ☒ Normal ☐ Below: _____ (m) ☐ Above: _____ (m)

Water Clarity: ☒ Clear ☐ Turbid ☐ Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
2.5	100

Channel Condition: (check one) ☐ Natural ☒ > 20-year-old Channelization ☐ 10- to 20-year-old Channelization ☐ < 10-year-old Channelization ☐ Concrete Channel

Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km²)
100	1.52	3.71	1	

Comments / Notes

WX: 30% CC ≈80°F

STREAM width 7ft

LB	0	0
1	0.2	0
2	0.3	0.18
3	0.3	0.16
4	0.4	0.15
5	0.3	0.20
6	0.2	0.03
7	0	0

0.23 cfs = 0.006 cms

* Purple loosestrife at site.

Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3600-532A (R 6/07)

Rating Item	Excellent	Good	Fair	Poor	Score
Riparian Buffer Width (m) Width of contiguous undisturbed land uses; meadow, shrubs, woodland, wetland, exposed rock	Riparian zone well protected; buffer wide (> 10.0 m) 15	Riparian zone protected, but buffer width moderate (5.0 - 10.0 m) 10	Riparian zone moderately disturbed, buffer narrow (1.0 - 4.9 m) 5	Most of the riparian zone disturbed, buffer very narrow or absent (< 1.0 m) 0	15
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Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; > 15% of stream 15	Cover common, but not extensive; 10 - 15% of stream 10	Occasional cover, limited to one or two areas; 5 - 9% of stream 5	Cover rare or absent; limited to < 5% of stream 0	5
				Total Score	48

0.2 | 12.5